

THAT WHICH IS CLAIMED IS:

1. A method of conducting a process hazard analysis (PHA), comprising the following steps that are performed in a data processing system:

- 5           selecting a chemical process to be evaluated;  
              selecting a study type to be performed on the chemical process;  
              conducting the selected study type on the chemical process,  
              wherein the chemical process is evaluated for the presence of a hazard  
              scenario; and then  
10           generating a resolution plan to the hazard scenario.

2. The method of Claim 1, wherein the study type is selected from the group consisting of TEDPHA, TEXPHA, Maintenance and Operability (MOP) and Distributed Control System (DCS) study types.

- 15           3. The method of Claim 1, wherein the PHA is conducted in order to comply with the Process Safety Management (PSM) standard and the Environmental Protection Agency Risk Management Plan.

20           4. The method of Claim 1, wherein the chemical process is evaluated for a Worst Case Credible Consequence hazard scenario.

              5. The method of Claim 1, wherein the study type is a revalidation study of the chemical process.

25           6. The method of Claim 1, wherein the study type is an initial study of the chemical process.

              7. The method of Claim 1, further comprising the step of  
30           dividing the process into nodes prior to the conducting step.

              8. The method of Claim 1, wherein the conducting step comprises the generation of a risk ranking of the hazard scenario.

9. The method of Claim 8, wherein the generation of a risk ranking comprises the analysis of a risk matrix.

10. The method of Claim 1, further comprising the step of  
5 customizing the study type prior to the conducting step.

11. The method of Claim 10, wherein the customizing step comprises generating a list of questions to evaluate the chemical process.

12. The method of Claim 10, wherein the customizing step  
10 comprises creating a risk matrix to evaluate the chemical process.

13. The method of Claim 12, wherein the risk matrix comprises  
15 parameters of consequence severity.

14. The method of Claim 12, wherein the risk matrix comprises  
parameters of the frequency of occurrence of a consequence.

15. The method of Claim 1, further comprising the documentation  
20 of the hazard scenario prior to the generation of the resolution plan.

16. The method of Claim 1, wherein the resolution plan  
comprises more than one action item.

17. The method of Claim 1, wherein the resolution plan  
25 comprises a final action item and at least one interim action item to be  
completed prior to the completion of the final action plan.

18. The method of Claim 1, wherein the resolution plan  
30 comprises at least one target date for completing an action item.

19. The method of Claim 1, wherein the generating step is  
followed by a tracking step, whereby the status of the resolution plan is  
monitored for completion of action items .

20. The method of Claim 19, wherein the status of the resolution plan is monitored for completion of action items by the target date.

21. The method of Claim 1, further comprising the step of  
5 generating at least one report.

22. The method of Claim 21, wherein the report comprises a description of the hazard scenario and the resolution plan.

10 23. The method of Claim 1, further comprising the step of generating a resolution database after the step of generating the resolution plan.

15 24. The method of Claim 23, wherein the resolution database comprises one or more parameters selected from the group consisting of the names of persons responsible for carrying out the resolution plan, departments responsible for carrying out the resolution plan, sites at which the resolution plan will be carried out, target dates for completion of the resolution plan, completed action items, and uncompleted action items.

20 25. A data processing system for conducting a process hazard analysis, comprising:

25 means for selecting a chemical process to be evaluated;  
means for selecting a study type to be performed on the chemical process;

means for conducting the selected study type on the chemical process, wherein the chemical process is evaluated for the presence of a hazard scenario; and

30 means for generating a resolution plan to the hazard scenario.

26. The system of Claim 25, wherein the selecting means comprises means for selecting the study type from the group consisting of TEDPHA, TEXPHA, Maintenance and Operability (MOP) and Distributed Control System (DCS) study types.

27. The system of Claim 25, wherein the conducting means comprises means for evaluating the chemical process for a Worst Case Credible Consequence hazard scenario.

5           28. The system of Claim 25, wherein the selecting means comprises means for selecting a revalidation study of the chemical process.

10           29. The system of Claim 25, wherein the selecting means comprises means for selecting an initial study of the chemical process.

15           30. The system of Claim 25, wherein the conducting means comprises means for conducting a revalidation study of the chemical process.

            31. The system of Claim 25, wherein the conducting means comprises means for conducting an initial study of the chemical process.

20           32. The system of Claim 25, further comprising means for dividing the chemical process into nodes prior to the study being conducted.

            33. The system of Claim 25, the conducting means comprises means for generating a risk ranking of the hazard scenario.

25           34. The system of Claim 33, wherein the means for generating a risk ranking comprises means for analyzing a risk matrix.

30           35. The system of Claim 25, further comprising means for customizing the study type.

            36. The system of Claim 35, wherein the customizing means comprises means for generating a list of questions to evaluate the chemical process.

37. The system of Claim 35, wherein the customizing means comprises means for creating a risk matrix to evaluate the chemical process.

5 38. The system of Claim 25, further comprising means for documenting the hazard scenario.

39. The system of Claim 25, wherein the means for generating a resolution plan to the hazard scenario comprises means for generating a  
10 resolution plan comprising more than one action item.

40. The system of Claim 25, wherein the means for generating a resolution plan to the hazard scenario comprises means for generating a resolution plan with a final action item and at least one interim action item  
15 to be completed prior to the completion of the final action plan.

41. The system of Claim 25, wherein the means for generating a resolution plan to the hazard scenario comprises means for generating a resolution plan with at least one target date for completing an action item.  
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42. The system of Claim 25, further comprising tracking means for monitoring the status of the resolution plan for completion of action items.

25 43. The system of Claim 25, further comprising means for generating at least one report.

44. The system of Claim 43, wherein the means for generating at least one report comprises means for generating a report comprising a  
30 description of the hazard scenario and the resolution plan.

45. The system of Claim 25, further comprising means for generating a resolution database.

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46. The system of Claim 45, wherein the means for generating a resolution database comprise means for generating a resolution database comprising one or more parameters selected from the group consisting of the names of persons responsible for carrying out the resolution plan,  
5 departments responsible for carrying out the resolution plan, sites at which the resolution plan will be carried out, target dates for completion of the resolution plan, completed action items, and uncompleted action items.

47. A computer program product for conducting a process hazard  
10 analysis, the computer program product comprising a computer-readable storage medium having computer-readable program code embodied in the medium, the computer-readable program code comprising:

- computer-readable program code for selecting a chemical process to be evaluated;
- 15 computer-readable program code for selecting a study type to be performed on the chemical process;
- computer-readable program code for conducting the selected study type on the chemical process, wherein the chemical process is evaluated for the presence of a hazard scenario; and
- 20 computer-readable program code for generating a resolution plan to the hazard scenario.

48. The computer program product of Claim 47, wherein the computer-readable program code for selecting the study type comprises  
25 computer-readable program code for selecting the study type from the group consisting of TEDPHA, TEXPHA, Maintenance and Operability (MOP) and Distributed Control Computer program product (DCS) study types.

30 49. The computer program product of Claim 47, wherein the computer-readable program code for conducting the study type comprises computer-readable program code for evaluating the chemical process for a Worst Case Credible Consequence hazard scenario.

50. The computer program product of Claim 47, wherein the computer-readable program code for selecting the study type comprises computer-readable program code for selecting a revalidation study of the chemical process.

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51. The computer program product of Claim 47, wherein the computer-readable program code for selecting the study type comprises computer-readable program code for selecting an initial study of the chemical process.

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52. The computer program product of Claim 47, wherein the computer-readable program code for conducting the study type comprises computer-readable program code for conducting a revalidation study of the chemical process.

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53. The computer program product of Claim 47, wherein the computer-readable program code for conducting the study type comprises computer-readable program code for conducting an initial study of the chemical process.

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54. The computer program product of Claim 47, further comprising computer-readable program code for dividing the chemical process into nodes prior to the study being conducted.

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55. The computer program product of Claim 47, computer-readable program code for conducting the selected study type comprises computer-readable program code for generating a risk ranking of the hazard scenario.

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56. The computer program product of Claim 47, wherein the computer-readable program code for generating a risk ranking comprises computer-readable program code for analyzing a risk matrix.

57. The computer program product of Claim 47, further comprising computer-readable program code for customizing the study type.

5 58. The computer program product of Claim 57, wherein computer-readable program code for customizing the study type comprises computer-readable program code for generating a list of questions to evaluate the chemical process.

10 59. The computer program product of Claim 57, wherein the computer-readable program code for customizing the study type comprises computer-readable program code for creating a risk matrix to evaluate the chemical process.

15 60. The computer program product of Claim 47, further comprising computer-readable program code for documenting the hazard scenario.

20 61. The computer program product of Claim 47, wherein the computer-readable program code for generating a resolution plan to the hazard scenario comprises computer-readable program code for generating a resolution plan comprising more than one action item.

25 62. The computer program product of Claim 47, wherein the computer-readable program code for generating a resolution plan to the hazard scenario comprises computer-readable program code for generating a resolution plan with a final action item and at least one interim action item to be completed prior to the completion of the final action plan.

30 63. The computer program product of Claim 47, wherein the computer-readable program code for generating a resolution plan to the hazard scenario comprises computer-readable program code for generating a resolution plan with at least one target date for completing an action item.



64. The computer program product of Claim 47, further comprising computer-readable program code for tracking, comprising computer-readable program code for monitoring the status of the resolution plan for completion of action items .

65. The computer program product of Claim 47, further comprising computer-readable program code for generating at least one report.

66. The computer program product of Claim 65, wherein the computer-readable program code for generating at least one report comprises computer-readable program code for generating a report comprising a description of the hazard scenario and the resolution plan.

67. The computer program product of Claim 47, further comprising computer-readable program code for generating a resolution database.

68. The computer program product of Claim 67, wherein the computer-readable program code for generating a resolution database comprise computer-readable program code for generating a resolution database comprising one or more of parameters selected from the group consisting of the names of persons responsible for carrying out the resolution plan, departments responsible for carrying out the resolution plan, sites at which the resolution plan will be carried out, target dates for completion of the resolution plan, completed action items, and uncompleted action items.